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A.D. 1888, 7th MARCH. N° 3543.

COMPLETE SPECIFICATION.

**Improved Combined Stretcher and Ambulance Seat, more
Particularly Applicable for Use in Mines.**

I, CHARLES SEBASTIAN SMITH of Shipley, Derby, Land Agent and Colliery Manager, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

5 My invention relates to an improved construction of stretcher, so arranged that it can either be used in a fully extended horizontal position, or partially folded so as to assume the form of a chair, or it can be folded up so as to be of comparatively small dimensions for the sake of portability and stowage, and it is arranged so that it can
10 either be suspended by springs in a vehicle, such as a mine train or tub, or be carried by means of handles that are slid inwards when not required.

I will proceed to describe the improved stretcher with reference to the accompanying drawings, in which Fig. 1 shew a plan view of the stretcher when folded together in its portable form, Fig. 2 shews an edge view, Figs. 3 and 4 shew respectively a plan and side view of the same to a smaller scale, fully extended, Fig. 5 shews it partially
15 folded so as to form a seat. The stretcher consists firstly of a frame formed of two side bars A A connected together by iron rods B B, secondly of a seat C pivotted at its middle to the side bars A A at a joint halfway between the two rods B B; thirdly of a back support D, hinge-jointed to the one end of the seat C, and fourthly of a leg support E hinge-jointed to the other end of the seat, the hinges of D and E being
20 arranged to open in contrary directions, so that while the part D folds under the seat C, the part E folds over the same, as shewn in Figs. 1 and 2. Each side bar A carries two sliding handles F F¹ that slide in and out of metal loops G G¹ fixed on the bar, and when the parts C D and E are extended flat as at Fig. 3, the handles are passed through loops H H on the outer end of D, thus preventing this from folding
25 in at its joint with C.

The loops H may either be made to turn in and out on hinges, as shewn, or to slide in and out on guides.

To eyes on the loops G are hung spring suspenders I having hooks I¹ at their ends by which the stretcher can be suspended from the sides of trams or trucks as will be
30 presently explained; when not in use, they are hooked into eyes J on the frame.

[Price 8d.]

Smith's Improved Combined Stretcher and Ambulance Seat Applicable for Use in Mines.

The back support D has a head rest K, formed of a box with lid, for containing bandages &c, covered by a cushion, the box being attached to two iron bars L sliding through loops on D, in which they are fixed by pinching screws so as to adjust the head rest to the length of the person upon the stretcher.

The leg support E may be provided with a folding foot rest M which is made adjustable in the same way as the head rest.

From the above described construction it will be seen that, assuming the stretcher to be in the folded condition shewn at Figs. 1 and 2, and that it is desired to open it to the fully extended position, Fig. 3, it is only necessary to raise up the end of C so as to turn it on its pivots, whereby the parts D and E will be made to slide outwards over the bars B until they assume the position at Figs. 3 and 4, and on their sliding out the handles F so as to pass through the loops H and thus secure the parts in this position, the stretcher can either be carried by the handles, or it may be suspended by the spring suspenders I from the sides of two open end trams as indicated at Fig. 6 or by attaching the spring suspenders to eyes on the ends of the handles F, the stretcher may be suspended from two fast end trams, as at Fig. 7.

There may also be provided underneath the frame A four hinged legs N N, which, when required, can be secured in the vertical position by struts, as indicated at Fig. 8, the spring suspenders I being in that case connected to the lower ends of the legs, so that the stretcher can then be suspended upon two fast end trams, as shewn; or it can be suspended in one tram in the partly folded position as shewn at Fig. 9.

The injured person having been conveyed in either of the above described ways along the workings of a mine, to the shaft in order to be raised to the mouth of the same, the stretcher can then, if in the extended position, without removing the person therefrom, be brought from that position Figs. 3 and 4 to the partially folded or seat form at Fig. 5, by simply pushing back the handles F out of the loops H and then gradually raising the outer end of the part D, whereupon the end of C which is connected to D will sink down, while its other end will rise, raising E, so that the three parts will then assume the angular position shewn, in which they are secured simply by catches O at the back of D catching on to the one bar B, while the part E will be supported by the other bar B. By this means the stretcher will be shortened sufficiently to allow of the person being passed up a shaft of limited dimensions, while at the same time the height occupied will be well within the limits of that of the smallest cage.

Arrived at the pits mouth, the stretcher can, if desired, be again brought to its fully extended position, and be either carried by hand or be suspended in a cart or other conveyance.

The parts C, D and E are shewn constructed of a rectangular frame with longitudinal slats. These may conveniently serve for securing the legs and body of the injured person by bandages passed round these parts and round the slats. The bearing surfaces may however be made of wickerwork or wire netting or wire springs such as are used in spring mattresses, or even canvas may be used, but when the stretcher is to be stored in a mine I prefer to make the parts of wood as described, as the canvas might be deteriorated by the damp.

It will be seen from the foregoing description that the improved stretcher is of an exceedingly inexpensive construction and has the great advantage of requiring no screw or other detachable fastening for securing it in either position.

When folded, it occupies very little space, and can be carried about in one hand.

Although I have shewn all the principal parts of the stretcher as being made of wood, yet they may equally well be made of metal, either wholly or in part.

Also, in order to afford considerable strength combined with lightness, the frame-work and handles may be constructed as trusses instead of as solid bars.

Having now particularly described and ascertained the nature of this invention and in what manner the same is to be performed, I declare that what I claim is:—

1. In a stretcher, the combination of a seat C, a body support D, and a leg

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support E, hinged together, the seat C being pivotted at its middle to a frame A B, so that the stretcher can either have the parts C, D, E fully extended, or partly folded so as to form a seat with the parts D and E resting against the bars B B of the frame, substantially as herein described.

5 2. In combination with the construction of stretcher referred to in the preceding claim, the use of sliding handles F which, when extended, pass through loops on the part D, so as to hold the parts in the extended position, substantially as herein described.

10 3. In combination with the construction of stretcher referred to in the preceding claim, the use of hooked spring suspenders I I¹ for suspending the same, either in the extended or in the partly folded position, in or upon trams, tubs, carts and the like, substantially as herein described.

4. The construction of combined stretcher and ambulance seat arranged and operating as herein described.

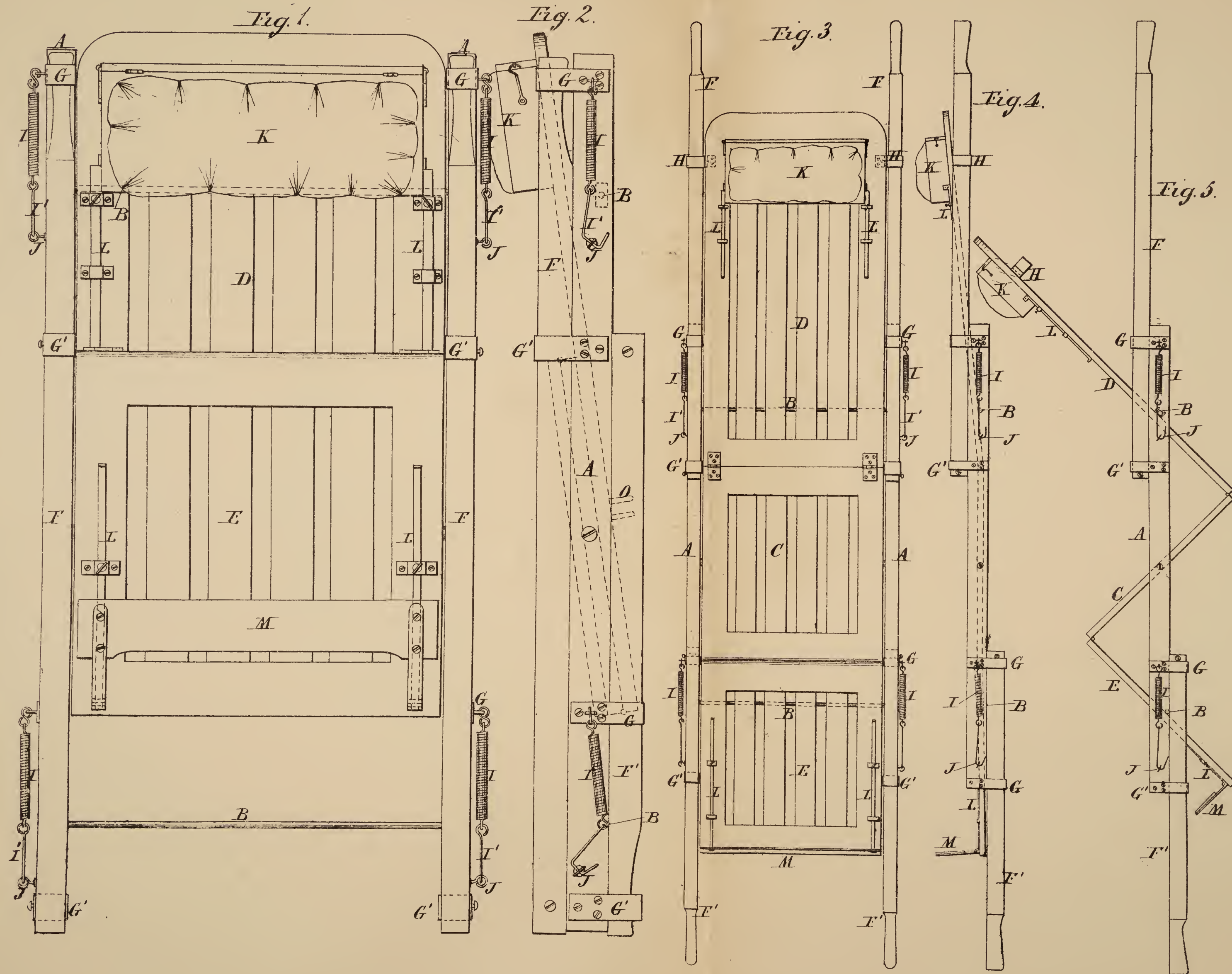
15 Dated this 7th day of March 1888.

ABEL & IMRAY,
Agents for the Applicant.

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1888.





[This Drawing is a reproduction of the Original on a reduced scale.]



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Fig. 9.

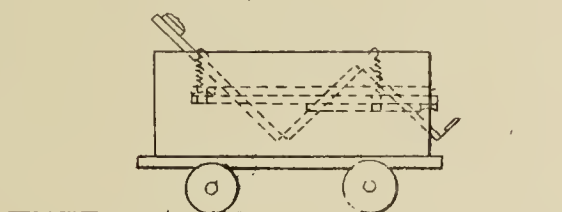


Fig. 6.

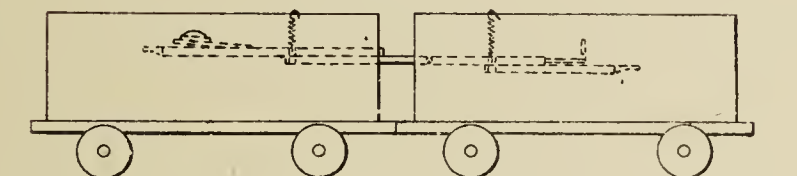


Fig. 8.

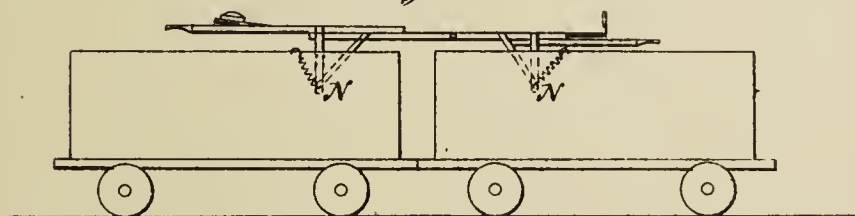
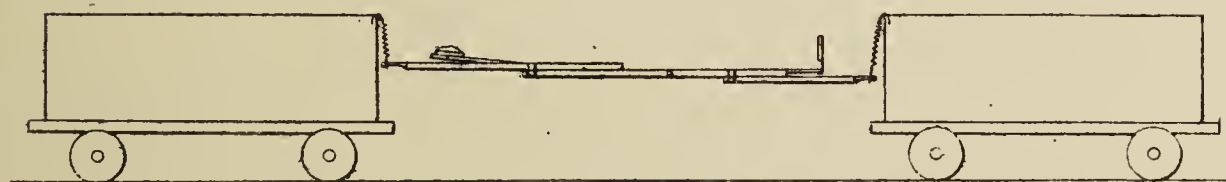


Fig. 7.



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